What is claimed is:

1. A surgical suction irrigation handpiece comprising:

a housing shell of rounded elongate shape having a first end, a second end, a first elongate wall extending between and rounded into said ends, said first elongate wall having a convexly rounded part adjacent said first end and a transverse groove between and rounded into said second end and said convexly rounded part, said shell further having a second elongate wall opposite said first elongate wall and extending between said ends;

an elongate conduit extending beyond said first end of said shell and integrally fixed with respect to said shell adjacent a length edge of said second elongate wall;

at least one fluid tube extending away from said shell adjacent said second end;

manual valve actuators facing out from and spaced along said elongate second wall adjacent said conduit and including a first said valve actuator located substantially opposite and facing away from said convexly rounded part of said first elongate wall and a second said manual valve actuator located substantially opposite to said transverse groove in such first elongate wall.

2. The apparatus of Claim 1 in which at least one said manual valve actuator is supported for translation on an axis extending into said housing shell, an arm rotatably fixed about said translation axis and radially extending therefrom, said arm being substantially opposite said transverse groove and extending generally sidewardly from said translation axis, said arm constituting a third manual valve actuator.

3. The apparatus of Claim 1 in which said first shell end is convexly rounded and said conduit extends beyond said rounded shell first end and defines therewith a finger engagable notch.

4. The apparatus of Claim 1 in which said shell second end is convexly rounded and said one fluid tube extends from said rounded second end, said one tube and rounded housing second end forming a finger engagable notch.

5. The apparatus of Claim 1 in which said shell has elongate side walls circumferentially connecting said first and second elongate walls and longitudinally extending between said ends, ends of said transverse groove being convexly rounded into said sidewalls.

6. The apparatus of Claim 5 in which said transverse groove and sidewalls form a surface complementary to a thumb/first finger web of an adult user's hand, said convexly rounded part of said first elongate wall forms a surface complementary to the cupped palm of an adult user's hand, said transverse groove and convexly rounded part of said first elongate wall being circumferentially spaced from said manual valve actuators to facilitate their engagement by an adult user's middle fingers, said second elongate wall and said first end having a rounded joinder, said manual valve actuator adjacent said first end having a valve barrel extending beyond said second elongate wall, said conduit extending beyond said first end with said valve barrel forming a finger receiving notch at said rounded joinder, said

manual valve actuator adjacent said second end having a translation axis extending into said shell, an arm extending radially from said transverse axis and generally sidewardly of said housing shell, said arm being within reach of and engagable by at least one of the thumb and first finger of an adult user's hand.

7. The apparatus of Claim 5 in which said transverse groove and sidewalls form a surface complementary to a middle finger of an adult user hand, said convexly rounded part of said first elongate wall and adjacent sidewalls form a surface complementary to a further finger of an adult user hand, said conduit extending beyond said first end of said shell and therewith defining a notch engagable by a further finger of a user hand, said tube and second end forming a notch engagable by a further finger of a user hand, said manual valve actuators being circumferentially spaced from said second elongate wall to facilitate their engagement by the thumb of an adult user's hand, said manual valve actuator adjacent said second end having a translation axes extending into said shell, an arm extending radially from said translation axis and generally sidewardly of said housing shell and being within reach of and engagable by the thumb of an adult user's hand.

8. A surgical suction irrigation handpiece, comprising:

a housing including a fluid flow passage and a valve barrel transversely interposed in said fluid flow passage, said fluid flow passage opening into said valve barrel, said valve barrel having an open end and a closed end, a structure in said closed end including a transverse slot;

a valve body coaxially reciprocable in said valve barrel, said valve body having a transverse through passage, said valve body having a springy leg slidable axially in and held against rotation by said transverse slot to prevent said valve body from rotating in said valve barrel, said leg having a foot and resiliently holding said foot trapped under an edge of said transverse slot to prevent escape of said valve body from said valve barrel open end.

9. The apparatus of Claim 8 in which said valve body has two said springy legs resiliently engaging opposite ends of said slot.

10. The apparatus of Claim 8 in which said valve body has an actuable end remote from said leg and adjacent said open end of said valve barrel, said valve body actuable end having a transverse recess, said valve body having a transverse through opening at the inner end of said recess, a pushbutton having a hand engagable outboard face and an inboard extending springy leg insertable in said transverse recess to prevent rotation of said pushbutton on said valve body, said pushbutton leg having a foot and resiliently holding said foot in said transverse through opening to prevent removal of said pushbutton from said valve body.

11. The apparatus of Claim 8 in which said structure in said closed end of said valve barrel includes an interiorly extending coaxial boss, said slot

being in the interior end of said boss, a transversely wider second slot opening through said valve barrel closed end and aligned with said first mentioned slot to receive said foot and an adjacent portion of said leg freely reciprocably therethrough with said valve body at an inboard position in said valve barrel, a spacing in said valve barrel backed by said valve barrel closed end and surrounding said boss and leg and bearing on a portion of said valve body from which said leg extends to urge said valve body toward the open end of said valve barrel.

12. The apparatus of Claim 8 in which said valve body has a reduced diameter waist having a reduced diameter, longitudinally extending, generally cylindrical core, a seal spool having a coaxial through passage snugly sleeved on said waist, an axially extending groove and rib structure connecting and positively preventing relative rotation of said seal spool and valve body such that said body transverse through passage and seal rib are circumferentially fixed with respect to each other, said seal spool having coaxial radially outwardly extending circular end flanges of generally rounded profile which flank a substantially cylindrical mid-portion of reduced diameter, an axial seal rib protruding radially outwardly from said mid-portion and axially between said flanges.

13. The apparatus of Claim 12 including a leak control sleeve radially interposed between said valve body and the interior wall of said valve barrel, said sleeve having circumferentially extending window open to said housing fluid flow passage at one side of said valve

barrel and to said valve body, said valve body having an inboard position in said valve barrel and communicating said valve body transverse through passage through said sleeve window with said housing fluid flow passage, said valve body having an outboard position in said valve barrel and communicating said seal spool through said window with said housing fluid flow passage, said leak control sleeve having a closed circumferential position in which said seal spool rib bears sealingly on the interior face of said leak control sleeve at a location circumferentially beyond the end of said window so as to block flow circumferentially therepast, said sleeve having a further circumferential position in which said seal rib faces said window at a location circumferentially spaced from the ends of said window so as to open a flow path including (1) said housing fluid flow path on one side of said valve barrel, (2) an end portion of said window radially opposed thereto, (3) the intermediate portion of said window radially between said seal rib and the interior wall of said valve barrel, (4) the other end portion of said window, and (5) a circumferentially extending path lying radially between another portion of said reduced diameter mid-portion of said seal spool and the interior wall of said sleeve.

14. The apparatus of Claim 13 in which the axially spaced end flanges of said seal spool seal against the interior wall of said sleeve at locations axially flanking the axially spaced edges of said window to prevent leakage axially therebeyond and toward the ends of said valve body.

15. The apparatus of Claim 14 including a circumferentially extending ridge on the interior wall of the said valve barrel adjacent the closed end thereof, said sleeve having a radially outwardly projecting rim snap fitted past said ridge, said sleeve having a radially outward projecting flange bearing on the outer end of said valve barrel, said sleeve being axially fixed with respect to said valve barrel by said rim and flange thereof.

16. The apparatus of Claim 13 in which the outer end of said valve barrel has a circumferentially extending notch therein, said sleeve having a radially outwardly extending flange which circumferentially rides on the outer end of said valve barrel, a radially outwardly extending key fixed with respect to said sleeve adjacent said flange and the outer periphery of said sleeve, said key being circumferentially narrower than and disposed in said notch, said key and notch limiting circumferential displacement of said sleeve window with respect to said housing fluid flow passage and seal rib.

17. The apparatus of Claim 16 including a user hand engageable arm fixedly radially outwardly extending from said flange and said valve barrel for arcuate movement of said sleeve with respect to said valve barrel and valve body, said housing carrying angularly spaced indicia along the path of arcuate movement of said arm to indicate the circumferential position of said sleeve window and thus the extent of leakage around said seal rib.

18. The apparatus of Claim 8 in which said fluid flow passage is a suction passage.

19. The apparatus of Claim 12 in which said housing fluid flow passage is an irrigation liquid passage and said valve barrel is of inside diameter to snugly receive said valve body for axial movement therein, said seal spool having at least one annular sealing flange bearing in sealing engagement on the interior wall of said valve body axially inboard of said irrigation flow passage.

20. The apparatus of Claim 12 in which said housing has two said valve barrels, namely a suction valve barrel and an irrigation valve barrel, and two such fluid flow passages, namely, a suction flow passage intercepted by said suction valve barrel and an irrigation flow passage intercepted by said irrigation valve barrel, two said valve bodies being received respectively in said suction and irrigation valve barrels, the inner diameter of said suction valve barrel being greater than that of said irrigation valve barrel, and a suction leak control sleeve disposed radially between said suction valve barrel and said one of said valve bodies therein.

21. The apparatus of Claim 13 in which the interior wall of said valve barrel tapers divergently toward said valve barrel open end, said leak control sleeve having an outer peripheral wall which tapers in a manner complementary to said valve barrel interior wall taper, such tapers providing a rotating seal between said sleeve and valve barrel and thereby sealing the edges of said window against leakage.

22. A surgical fluid flow controlling handpiece having a range of relatively low flow rates and a relatively high flow rate, comprising:

a housing having a fluid flow passage therethrough;

first flow control means on said housing and displaceable through a range of positions to change the flow rate through said fluid flow passage over a range of relatively low flow rates;

second flow control means on said housing and associated with said first means and operable, with said first means at a given location in its said range of positions, to provide a relatively high flow rate.

23. The apparatus of Claim 22 in which said second flow control means comprises a valve member axially displaceable in said housing and located across said fluid flow path, said valve member having a transverse opening, said transverse opening being in registry with said fluid flow path to provide said relatively high flow rate, said axially displaceable valve member having a seal adjacent said transverse opening, said first flow control means comprising a rotatable further member in said housing surrounding said valve member, said range of positions being a range of circumferential positions of said rotatable further member with respect to said housing and valve member, said rotatable further member having a wall, said wall being interposed between said valve member seal and said fluid flow path at said one end of said range, said rotatable further member having a window interposed between said seal and said fluid flow path at positions in said range and offset from said one end of said range, said offset positions corresponding to different positions of said window open to said seal and

fluid flow path, and thus to said range of relatively low flow rates.

24. The apparatus of Claim 22 in which said first flow control means comprise an axially displaceable valve member located in said housing and across said fluid flow path, said valve member having a transverse opening displaceable through said range of positions with respect to said fluid flow path, in which said valve means transverse opening is substantially fully open to said fluid flow path at substantially one end of said range and is substantially fully closed to said fluid flow path at the other end of said range and is correspondingly variously partly open to said fluid flow path at intermediate parts of said range, said fluid flow path having a relatively low flow rate fluid supply connection, said second flow control means comprising normally open switch contacts on said housing and operatively associated with said valve member said normally open condition of said switch contacts corresponding to a first part of said range of valve member positions excluding said full open position of said valve member, an electric circuit including said contacts and an energy source and a fluid pump unit connected to said fluid supply connection, said switch contacts having a closed position corresponding to a second part of range of valve positions including said full open end of said range of positions of said valve member and to an energized condition of said fluid pump unit wherein it supplies a relatively high fluid flow rate.

25. A surgical fluid flow handpiece comprising:

a housing having a fluid through passage;

a valve barrel interposed in said fluid through passage;

a leak control sleeve rotatable in said valve barrel, said sleeve having a peripheral wall and a window through part of said peripheral wall, said sleeve having at least one circumferential position communicating said window and housing fluid through passage;

a valve member axially displaceable in said sleeve and having a substantially closed position;

a seal spool on said valve member and having an axially extending, radially protruding rib, said seal spool sharing a common radial plane of said valve barrel with said housing fluid through passage and sleeve window with said valve member in said closed position;

said sleeve having a closed circumferential position sealing said sleeve peripheral wall against said seal spool axial rib and thereby blocking flow through said housing fluid through passage, said sleeve having a substantially fully open circumferential position opposing said seal spool rib to a circumferentially intermediate part of said window and thus opening a flow path (1) circumferentially through said window and (2) around said rib and (3) between parts of said housing fluid through passage separated by said valve barrel, said window having axially spaced substantially parallel circumferentially extending edges and a circumferential end portion in which said circumferentially extending edges converge and form a circumferentially elongated, tapered indent, such that successive increments of circumferential opening of said sleeve, from said closed circumferential position toward said fully open circumferential position, include (1) an axially narrow flow opening past said axial rib and (2) successive incrementally axially wider flow openings, to facilitate precise selection of flow rate in a relatively narrow band of flow rates at the low end of the range of flow rates permitted by relative positioning of said rib with respect to said window.

26. The apparatus of Claim 25 wherein said substantially parallel circumferential edges lie in axially spaced first and second substantially radial planes of said sleeve, said tapered indent having one circumferential edge continued in said first radial plane and its other circumferential edge angled from said second radial plane toward said first radial plane.

27. The apparatus of Claim 26 in which said tapered indent has a rounded end of diameter less than half of the axial width of said window.

28. The apparatus of Claim 25 in which said seal spool has diametrically opposite ones of said axially extending ribs, said sleeve having a further window circumferentially spaced from and on the opposite side of said sleeve from said first mentioned window, said windows being open to parts of said housing fluid through passage separated by said valve barrel, said windows together including three relatively blunt circumferential end portions and a tapered end portion defined by said tapered indent, said tapered end portion making said first mentioned window longer than said second window, such that said first mentioned spool rib starts to open said tapered end of said first mentioned window while the other said rib is still circumferentially spaced between

said windows, such that the said flow rates at the low end of the range are precisely controlled by the circumferential location of said first mentioned rib along said window tapered end portion.

29. The apparatus of Claim 28 wherein the maximum leak flow rate around said seal spool corresponds to a location of said ribs circumferentially along said respective said windows at a maximum distance from said ends of said respective windows.

30. A surgical fluid flow apparatus comprising:

a housing having a fluid flow path therethrough;

a first valve structure in said fluid flow path and having a first variable size valve opening;

a first variable manual control member operatively connected to said variable size valve opening, said first valve structure including a valve member movable in said housing along a path across a portion of said fluid flow path to vary the size of said variable size valve opening, said valve member having positions on said path corresponding to a (1) fully closed position, (2) a range of partially closed positions and (3) a substantially fully open position;

a switch actuating member movable on said housing and operatively fixed with respect to said valve member for movement therewith;

a switch fixed with respect to said housing along the path of movement of said switch actuating member and having an electric current flow condition corresponding to said valve member positions from intermediate in said range to said fully open position and an electric current blocking condition corresponding to said valve member fully closed position and to said position intermediate in said range of partially closed positions.

31. The apparatus of Claim 30 in which said valve structure comprises a valve member axially moveable into said housing and having a transverse opening axially movable across said housing fluid flow path to define said variable size valve opening therewith, said switch being located in said housing adjacent an axially intermediate, partly open position of said valve member.

32. The apparatus of Claim 31 in which said switch comprises a fixed conductive leaf, a springy conductive leaf self-pressed against said fixed leaf in the electric current flow condition of said switch, said leaves extending substantially parallel to said valve member path and being mounted on said housing adjacent the inboard end of said valve member path and extending along said valve member path, said switch actuator member comprising an nonconductive foot fixed with respect to said valve member for travel therewith, said foot being slidable between said leaves and separating said leaves throughout about the first 1/3 of the opening travel of said valve member and allowing contact between said leaves in about the last 2/3 of said opening travel.

33. The apparatus of Claim 30 including an elongate fluid path connected between said housing fluid flow path and a fluid port having, in use, a relatively gentle pressure level corresponding to a relatively small pressure differential from atmospheric pressure, a pump unit locatable remotely with respect to said handpiece and connected in said elongate fluid path adjacent said

fluid port and having parts respectively operatively connected to said handpiece and said fluid port, said pump unit having a deactuated condition in which it is a passive portion of said fluid path and said handpiece connected part of said pump unit is substantially at said relatively gentle pressure level, said pump unit having an actuated condition providing a pressure increase across said pump unit and in which the handpiece connected part of said pump unit is at a relatively aggressive pressure level corresponding to a relatively large pressure differential from atmospheric pressure, an electric circuit connecting such switch and said pump unit and an electric power source, such that said electric current flow position of said switch corresponds to said pump unit actuated condition, whereby, in use, said pump unit (1) passes said relatively gentle fluid pressure level to said handpiece with said variable size valve opening in said fully and adjacent ones of said partially closed positions and (2) applies said relatively aggressive fluid pressure level to said handpiece with said variable size valve opening in said substantially fully open and adjacent ones of said partially closed positions.

34. The apparatus of Claim 33 in which said fluid flow path is an irrigation liquid flow path.

35. The apparatus of Claim 34 in which said irrigation liquid flow path includes an irrigation liquid source locatable above said handpiece to apply a gravity responsive positive pressure to liquid it supplies to said pump unit, said pump unit in its energized condition

applying to its handpiece connected part a pressure greater than said gravity responsive pressure.

36. A surgical fluid flow apparatus comprising a handpiece;

a gravity liquid supply;

a pump unit operatively connecting said gravity liquid supply to said handpiece, said pump having an off condition in which it is a conduit to supply liquid at gravity pressure to said handpiece, said pump unit having an on condition in which it adds further pressure to said liquid and thus supplies liquid to said handpiece at higher than gravity pressure;

a valve structure in said handpiece controlling liquid flow through said handpiece to a surgical site, said valve structure including a pump on/pump off control operatively connected to said pump unit, said valve structure having partially and fully closed positions corresponding to said off condition of said pump unit and to gravitational pressure liquid applied to said handpiece, said valve structure having partially and full open positions corresponding to said on condition of said pump unit and to greater than gravitational liquid pressure in said handpiece.